

## AMENDMENTS TO THE CLAIMS

The claims relating to the above-captioned patent application, as amended herein and with the status thereof, are as follows:

1-8. (Canceled)

9. (New) A stir-friction welder, comprising:

a frame;

a lead screw rotatably interconnected with said frame;

a first drive interconnected with said lead screw;

a first sensor located between said frame and said lead screw;

a controller interconnected with said first sensor and said first drive;

a head mounted on said lead screw; and

a pin tool interconnected with said head, wherein rotation of said lead screw by said first drive, responsive to an input by said first sensor to said controller, changes a position of said head along said lead screw, and thereby a plunge depth of said pin tool relative to a workpiece.

10. (New) A stir-friction welder, as claimed in Claim 9, wherein:

said first sensor is a load cell.

11. (New) A stir-friction welder, as claimed in Claim 9, further comprising:

a bearing holder and a bearing mounted in said bearing holder, wherein said lead screw is rotatably supported by said bearing, wherein said first sensor interfaces with said bearing holder.

12. (New) A stir-friction welder, as claimed in Claim 9, wherein:

said head comprises a second drive interconnected with pin tool, wherein said second drive rotates said pin tool relative to the workpiece.

13. (New) A stir-friction welder, comprising:

a frame;

a lead screw rotatably interconnected with said frame;

a first drive interconnected with said lead screw;

5 a first sensor that is stationary;

a controller interconnected with said first sensor and said first drive;

a head mounted on said lead screw; and

a pin tool interconnected with said head, wherein rotation of said lead screw by said first drive, responsive to an input by said first sensor to said controller, changes a position of said head

10 along said lead screw, and thereby a plunge depth of said pin tool relative to a workpiece.

14. (New) A stir-friction welder, as claimed in Claim 13, wherein:

said first sensor is located between said frame and said lead screw.

15. (New) A stir-friction welder, as claimed in Claim 13, wherein:

said first sensor is a load cell.

16. (New) A stir-friction welder, as claimed in Claim 13, further comprising:

a bearing holder and a bearing mounted in said bearing holder, wherein said lead screw is rotatably supported by said bearing, wherein said first sensor interfaces with said bearing holder.

17. (New) A stir-friction welder, as claimed in Claim 13, wherein:

said head comprises a second drive interconnected with pin tool, wherein said second drive

20 rotates said pin tool relative to the workpiece.